NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

RESIDUE MANAGEMENT, SEASONAL

(Acre)
CODE 344

DEFINITION

Managing the amount, orientation, and distribution of crop and other plant residues on the soil surface during part of the year, while growing crops in a clean tilled seedbed.

PURPOSES

This practice may be applied as part of a conservation management system that meets the social and economic objectives of the producer and supports the following purposes, as applicable:

* Reduce sheet and rill erosion.

* Reduce soil erosion from wind.

* Manage snow to increase plant available moisture.

* Reduce surface salt accumulation caused by evaporation on areas with perched water tables.

* Provide food and escape cover for wildlife.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all cropland and other land where crops are grown.

This standard includes residue management methods practiced during the part of the year from harvest until residue is buried by tillage for seedbed preparation.

CRITERIA

General Criteria Applicable to All Purposes Named Above:

Loose residue to be retained on the field shall be uniformly distributed on the soil surface. Where combines or similar machines are used for harvesting, they shall be equipped with spreaders capable of redistributing residue over at least 80 percent of the working width of the header. Residue will be shredded or chopped as necessary for field management. Residue shall not be burned.

Additional Criteria to Reduce Sheet and Rill Erosion

The amount and orientation of residue needed to reduce erosion within the soil loss tolerance (T) or any other planned soil loss objective, shall be determined using current approved erosion prediction technology (RUSLE). Partial removal of residue by means such as baling or grazing, shall be limited to retain the amount needed. The remaining residue shall be maintained on the surface through periods when sheet and rill erosion has the potential to occur, or until planting, whichever occurs first. Calculations shall account for the effects of other practices or field operations in the conservation management system.

Any tillage that occurs during the management period shall be limited to methods which leave residue on the surface and maintain the planned cover conditions.

Additional Criteria to Reduce Soil Erosion From Wind

The amount of residue needed to reduce erosion within the soil loss tolerance (T) or any other planned soil loss objective, shall be determined using current approved wind erosion prediction technology. Partial removal of residue by means such as baling or grazing, shall be limited to retain the amount needed. The remaining residue shall be maintained on the surface through periods when soil erosion by wind has the potential to occur, or until planting, whichever occurs first. Calculations shall account for the effects of other practices in the conservation management system.

Any tillage that occurs during the management period shall be limited to methods which leave residue on the surface and maintain the planned cover conditions.

Additional Criteria to Manage Snow to Increase Plant Available Moisture

Stubble shall be left standing as high as possible by the harvesting operation, but not less than 6 inches in any case.

Stubble shall be maintained in a standing orientation over winter to trap and retain snow. Any tillage that occurs during this period shall be limited to undercutting tools such as blades, sweeps, or deep tillage implements such as rippers or subsoilers.

Loose residue may be removed providing that the remaining residue is left standing.

Additional Criteria to Reduce Surface Salt Accumulation Caused by Evaporation on Areas with Perched Water Tables.

Residue shall be allowed to remain on the surface until seedbed preparation just prior to planting.

Additional Criteria to Provide Food and Escape Cover for Wildlife

The amount of residue, height of the stubble, and length of the management period necessary for meeting habitat requirements for the target species or wildlife population shall be determined using the NM Wildlife Habitat Evaluation Guides.

Residue shall not be removed unless it is determined by the habitat evaluation procedure that such removal will not adversely affect habitat values.

Tillage shall be delayed until the end of the management period to maintain the food and cover value of the residue.

CONSIDERATIONS

For blowing soil control, standing residue of corn or sorghum and standing small grain stubble are more effective than flat residue of the same type. Tall stubble is more effective than an equal weight of short stubble and the finer the residue the greater the protection given the soil.

Surface residue helps reduce the rate of surface drying, reduce evaporation and reduces surface crusting. The higher evaporation rates which occur on clean tilled surfaces will increase salt accumulations at or near the soil surface in areas with perched water tables. This can reduce seed germination and seedling survival.

Removal of plant residue by baling or grazing often produces negative impacts on resources. These activities should not be performed without full evaluation of impacts on soil, water, animal, plant, and air resources.

Production of adequate amounts of crop residue necessary for the proper functioning of this practice can be enhanced by selection of high residue producing crops and crop varieties, by the use of cover crops, and by adjustment of plant populations and row spacing.

Moisture for germination can be conserved and exposure to erosion can be minimized by completing tillage and planting in a single

operation, or by performing primary tillage no more than three days before planting.

Shredding, disking, or chopping coarse or heavy amounts of residue before incorporation into the soil reduces problems with tillage and seedbed preparation. Smaller residue may also decompose more rapidly.

The effectiveness of stubble to trap snow increases with stubble height. Variable height stubble patterns may be created to further increase snow storage.

Flat residue is slightly more effective than standing residue in controlling water erosion.

The value of residue for wildlife habitat can be enhanced by leaving rows of unharvested crop standing at intervals across the field.

It is necessary in planning and implementing a residue management program to have measurements or dependable estimates of residue amounts prior to tillage, baling, or grazing. See Table in specifications for residue amounts which can be expected per bushel of grain produced.

PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice shall be prepared for each field or treatment unit according to the Criteria, Considerations, and O&M described in this standard.

Specifications shall be recorded using approved certification sheets, job sheets, narrative statements in the conservation plan, or other acceptable methods.

OPERATION AND MAINTENANCE

No operation and maintenance requirements, national in scope, have been identified for this practice.